

### **REMARKS**

Claims 1-16 are the claims currently pending in the Application.

Claims 1-16 are amended to clarify features recited thereby.

Although the Examiner did not object to the Title of the Specification, the Title is amended to include the word “ Forgetful.”

### ***Formal Matters***

Applicant thanks the Examiner for acknowledging the claim for foreign priority and the receipt of the priority document.

Further, Applicant thanks the Examiner for acknowledging review and consideration of the references cited in the Information Disclosure Statements filed on September 28, 2000 and on September 18, 2003.

### ***Clarification With Respect to the Inventors' Declaration***

The Examiner requires clarification regarding the inventive entity disclosed in the inventors' Declaration/Power of Attorney that recites Mr. Kenji Yamanishi and Mr. Jun-Ichi Takeuchi as the inventors for the present Application.

The Examiner cites an article, “On-line Unsupervised Outlier Detection Using Finite Mixtures with Discounting Learning Algorithms” in proceedings of 6<sup>th</sup> ACM SIGKDD, International Conference on Knowledge Discovery and Data Mining dated August 2000, pages 320-324, written by Mr. Kenji Yamanishi and Mr. Jun-Ichi Takeuchi, for which Mr. Graham Williams and Peter Milne are also listed as authors. The Examiner acknowledges that the article post-dates the priority date of the present

Application. However, the Examiner alleges that “the article appears to read upon the claimed invention” and therefore, the Examiner requests clarification regarding the relationship, of any, of Mr. Williams and Mr. Milne to the invention of the current Application.

Applicant submits that the contributions of Mr. Williams and Mr. Milne to the article were merely in providing technical review. The inventors’ Declaration/Power of Attorney is therefore correct as to the identity of the inventors. The Examiner’s request for clarification is therefore satisfied, and the request for clarification should be withdrawn.

***Rejection of Claims 1-16 under 35 U.S.C. §101 and  
under 35 U.S.C. §112, First Paragraph***

The Examiner rejects all of the claims (claims 1-16) under 35 U.S.C. § 101 as not being directed to a machine, manufacture, process, or composition of matter that produces “useful concrete and tangible results.”

Moreover, the Examiner rejects claims 1-16 under 35 U.S.C. §112, first paragraph, alleging that the invention as claimed is not supported by either a specific and substantial utility or a well established utility for the reasons set forth in the 35 U.S.C. § 101 rejection.

Further, the Examiner objects to claims 1, 16, 10 and 14 on the ground that the phrasing is awkward, specifically, because the information presented in the claims is allegedly hidden in the preambles.

These rejections and objection are traversed. Responsive to the 35 U.S. C. § 101 rejection of claims 1-16, and to the rejection of claims 1-16 under 35 U.S.C. §112, first paragraph, it is respectfully submitted that the claims set forth patentable subject matter under relevant Federal Circuit precedent. At most, the grounds for the rejections cited amount to bases for an objection. No claim amendment is required.

However, in the interest of expediting prosecution of the Application, the claims are amended as set forth herein. Therefore, the Examiner is respectfully requested to withdraw the rejections and the objection.

***Obviousness-Type Double Patenting Rejection of Claim 1***

The Examiner provisionally rejects claim 1 under the judicially created doctrine of obviousness-type double patenting, as being unpatentable over claim 1 of co-pending Application No. 10/179,374. This provisional rejection is traversed.

Co-pending Application No. 10/179,374 was filed after the filing of the present Application by the same Applicant (Mr. Yamanishi and Mr. Takeuchi). The Examiner alleges that claim 1 of the present Application is not patentably distinguishable from the co-pending Application's claim 1, and that claim 1 of the co-pending Application is broader than claim 1 of the present Application and reads thereon.

Pursuant to section 804 IIB of the MPEP, the judicially created doctrine of double patenting was developed "to prevent the unjustified or improper timewise extension of the right to exclude a granted by a patent." MPEP II804B, citing *In re Goodman*, 11 F.3d 1046 (Fed. Cir. 1993). The first question for non-statutory

obviousness type patenting is “does any claim in the application define an invention that is merely an obvious variation of an invention claimed in the patent?” (MPEP § 802 IIB1.) The “analysis employed in an obviousness-type double patenting determination parallels the guidelines for 35 U.S.C. § 103(a) rejection.” (*Id*, *underline added.*)

The Examiner alleges that claim 1 of the co-pending Application is “broader” than claim 1 of the present Application and therefore reads thereon. However, the Examiner cites no evidence for the allegation that claim 1 of the present Application is obvious from claim 1 of the co-pending Application. That is, the Examiner fails to set forth a proper rejection “under the guidelines for a 35 U.S.C. § 103(a) rejection.” Applicant respectfully submits that Applicant’s claimed invention as claimed in claim 1 of the instant Application would not have been obvious to a person of ordinary skill in the art based on claim 1 of the co-pending Application.

#### ***Rejection of Claims 1-16 under 35 U.S.C. § 102(b)***

The Examiner rejects claims 1-16 under 35 U.S.C. § 102(b) as being anticipated by Burge (Peter Burge and John Shaw-Taylor, “Detecting Cellular Fraud Using Adaptive Prototypes”, Proceeding of AI Approaches to Fraud Detection and Risk Management, pages 9-13, 1997).<sup>1</sup> This rejection is traversed.

---

<sup>1</sup> The Examiner identifies the Burge reference as being on pages 72-77. According to the Information Disclosure Statement filed, the article appears on pages 9-13.

In support of the 35 U.S.C. § 102(b) rejection over Burge, the Examiner cites the article discussed above, “On-line Unsupervised Outlier Detection Using Finite Mixtures with Discounting Learning Algorithms” in Proceedings of 6<sup>th</sup> ACM SIGKDD, International Conference on Knowledge Discovery and Data Mining dated August 2000, pages 320-324, by Kenji Yamanishi and Jun-Ichi Takeuchi, Graham Williams and Peter Milne, which article post-dates the present Application. The Examiner alleges that the Yamanishi article “maps to the model in the current application” (Office Action, Page 8) and therefore helps to explain its Disclosure.

At the outset, Applicant respectfully submits that statements in the Yamanishi article about Burge should not be used to limit interpretation of the claims of the present Application.

Applicant’s claimed invention is neither anticipated by nor obvious from the cited prior art, including Burge. First, Burge discloses a method of handling a continuous variable. Burge does not disclose or suggest handling continuous variables and non-continuous, categorical variables.

Second, Burge discloses using a long-term model and the short-term model does. As acknowledged by the Examiner (Office Action, page 21), Burge uses two models in the algorithm, the long-term model and the short-term model.

Burge does not disclose or suggest a unitary model. According to an aspect of Applicant’s claimed invention, this can yield a clearer statistical meaning and a lower computational cost.

In particular, independent claims 1 and 3 require, *inter alia*, “mean parameter,” variance parameter” and “weighting parameter” of a finite mixture distribution of normal distributions. Thus, claims 1 and 3 require a parametric and unitary model. Therefore, Burge does not disclose or suggest the recitations of claims 1 and 3. Accordingly, the rejection of claims 1 and 3 over Burge should be withdrawn.

Claim 2 depends from independent claim 1 and thus incorporates novel and nonobvious features thereof. Accordingly, claim 2 is patentably distinguishable over the prior art for at least the reasons that independent claim 1 is patentably distinguishable over the prior art.

Independent claims 4, 5, 12 and 13 require, *inter alia*, “a finite mixture distribution of kernel distributions.” Thus, claims 4, 5, 12 and 13 require a unitary model. Therefore, Burge does not disclose or suggest the recitations of independent claims 4, 5, 12 and 13.

Further, Burge discloses a non-parametric representation for a probabilistic model. Applicant’s claimed invention discloses a parametric representation.

Independent claims 6, 7, 14 and 15 require, *inter alia*, “discrete value data as input” and “histogram.” Thus, independent claims 6, 7, 14 and 15 require that a parametric and unitary model is used treating categorical variables. Therefore, Burge does not disclose or suggest the recitations of independent claims 6, 7, 14 and 15.

With respect to independent claims 8 and 10, these claims require, *inter alia*, “data which is described both in a discrete value and a continuous value” and “mean parameter”, “variance parameter” and “weighting parameter.” Thus, these claims require a parametric and unitary model handling both continuous variables and categorical

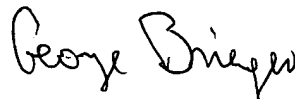
variables. Therefore, Burge does not disclose or suggest the recitations of independent claims 8 and 10.

Independent claim 9 requires, *inter alia*, “data which is described both in a discrete value and a continuous value”, “estimating a histogram with respect to said discrete value data part” and “estimating a probability density with respect to a continuous value data part.” Thus, claim 9 requires a parametric and unitary model handling both continuous variables and categorical variables. Therefore, Burge does not disclose or suggest the recitations of independent claim 9.

A Petition for Extension of Time for a one-month extension is filed herewith.

For at least the following reasons set forth in the foregoing discussion, Applicant believes that the Application is now allowable, and respectfully requests that the Examiner reconsider the rejections and allow the Application. Should the Examiner have any questions regarding this Amendment, or regarding the Application generally, the Examiner is invited to telephone the undersigned attorney.

Respectfully submitted,



George Brieger  
Registration No. 52,652

Scully, Scott, Murphy & Presser  
400 Garden City Plaza  
Garden City, New York 11530  
(516) 742-4343 Ext. 503

GB:eg